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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/041,001 | 12/28/2001 | Arthur L. Lanni | ABMS-0153/B000360 | 4719 |

7590

08/11/2003

Woodcock Washburn LLP
One Liberty Place - 46th Floor
Philadelphia, PA 19103

EXAMINER

DONOVAN, LINCOLN D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2832

DATE MAILED: 08/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/041,001

Applicant(s)

LANNI ET AL.

Examiner

Donovan Lincoln

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,6-15 and 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Claims 2-3, 5 and 16-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected claimed species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7. It is noted that non-elected claim 24 appears to belong with 25-28. It is assumed that applicant intended claim 24 to be grouped with claims 25-28.

Applicant's election with traverse of claims 1, 4, 6-15, 18-23 and 25-28 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that no undue burden is placed on the examiner to examine each embodiment. This is not found persuasive because each of the embodiments claim significant structural differences.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4 and 6-14 rejected under 35 U.S.C. 102(b) as being anticipated by Leiber [US 4,711,266].

Regarding claims 1, 4, 6, 8-12 and 14, Leiber discloses an actuator assembly [figure 1] comprising:

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- an annular housing [3] comprising a body and an extension member having an annular inner surface;
- a solenoid coil [2] disposed coaxially within the housing;
- a shaft [5] disposed coaxially with the solenoid coil; and
- an annular armature [4], having an outer surface, coupled to the shaft and movable between a first position proximate the solenoid coil and a second position distal of the solenoid coil wherein in the second position the armature and the body of the housing define a first gap therebetween, the extension member extending in an axial direction towards the armature and beyond the solenoid coil such that the inner surface of the extension member and the outer surface of the armature define a second gap therebetween, the width of the second gap being less than the width of the first gap.

Regarding claim 7, Leiber discloses the housing not enclosing the armature [figure 1].

Regarding claim 13, Leiber discloses the armature disposed substantially coaxially with the solenoid coil [figure 1].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leiber.

Leiber discloses the instant claimed invention except for the second gap width between the extension member and the armature being substantially constant.

It would have been obvious to a person having ordinary skill in the art at the time invention was made that during the period in which the armature is within the confines of the extension that the gap width between the extension member and the armature being substantially constant. The specific size of the extension and armature displacement would have been an obvious design consideration based on the specific application intended for the device.

Claims 18, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Leiber in view of Everett [US 4,664,136].

Regarding claim 18, Leiber disclose the instant claimed invention except for: the shaft including a shaft collar for limiting shaft travel, a core member located in the housing and a clamp plate disposed on the housing wherein the extension member extends in an axial direction towards the armature and beyond the clamp plate.

Regarding claim 18, Everett discloses an actuator [figure 2] including a housing [34], a coil [44] and a shaft [64], supported by an armature [78], having a collar [76] for limiting shaft travel.

It would have been obvious to a person having ordinary skill in the art at the time invention was made to include a collar on the shaft of Leiber, as suggested by Everett, for the purpose of preventing shaft overtravel.

Regarding claim 26, Everett further discloses a core member [46] disposed in the housing.

It would have been obvious to a person having ordinary skill in the art at the time invention was made to include a core in the housing of Leiber, as suggested by Everett, for the purpose of improving flux control and/or strength.

Regarding claim 28, Everett further discloses the housing including a clamp plate [60].

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use a clamp plate in the housing of Leiber, as suggested by Everett, for the purpose of supporting the coil within the housing.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Leiber in view of Franz [US 3,545,472].

Regarding claims 19-20, Leiber disclose the instant claimed invention except for the actuator shaft being threaded and the armature being secured to the shaft via a nut.

Franz discloses an actuator having a threaded shaft [64] including an armature [67] secured to the shaft via a nut.

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use the threaded shaft design of Franz for the shaft of Leiber, for the purpose of securing the armature to the shaft.

Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Leiber in view of Chase, Jr. [US 3,022,450].

Regarding claims 21-23, Leiber disclose the instant claimed invention except for: the armature having an annular recess to receive a biasing spring and an annular permanent magnet mounted within the housing.

Chase, Jr. discloses a an actuator [figure 1] including an armature [14] with an annular recess for receiving a biasing spring [32].

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use provide a biasing spring received by a recess in the armature of Leiber, as suggested by Chase, Jr., for the purpose of mounting the spring and biasing the armature.

The particular biased state would have been an obvious design consideration based on the desired biasing state.

Chase, Jr. further discloses an annular permanent magnet [38] mounted within the actuator.

It would have been obvious to a person having ordinary skill in the art at the time invention was made to include a permanent magnet in the actuator of Leiber, as suggested by Chase, Jr., for the purpose of latching the armature.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Leiber in view of Hattori et al. [US 6,125,803].

Leiber disclose the instant claimed invention except for a bushing for the shaft.

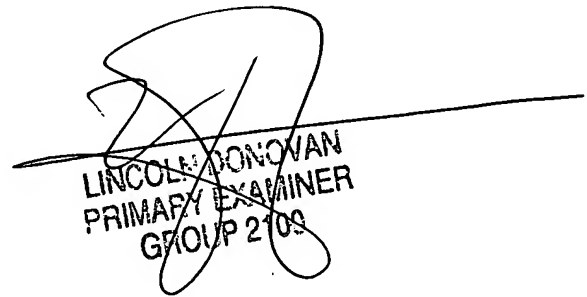
Hattori et al. disclose an actuator having a shaft [28] mounted on a bearing [44].

It would have been obvious to a person having ordinary skill in the art at the time invention was made to include a bearing/bushing for the shaft of Leiber, as suggested by Hattori et al., for the purpose of reducing shaft wear.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donovan Lincoln whose telephone number is 703 308-3111. The examiner can normally be reached on M-F 8:30-5:00.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1920.

ldd
August 4, 2003


LINCOLN DONOVAN
PRIMARY EXAMINER
GROUP 2103